

FIS920010074
I26-0016-D

CLAIM AMENDMENTS

1. (Currently amended) A method of cleaning a semiconductor material surface of a partially manufactured integrated circuit subsequent to implantation of dopant ions into the surface and prior to any other semiconductor manufacturing process, wherein the semiconductor material surface contains dopant ions, the method comprising:

implanting dopant ions into selected areas of the semiconductor material;

coating the semiconductor material surface containing the dopant ions with a solution consisting of a non-aqueous organic solvent selected from the group consisting of ketones, polyhydric alcohols, cyclic ethers and esters, wherein coating the semiconductor material surface occurs prior to formation of a barrier layer on the surface; and

removing the solvent and the dopant ions from the semiconductor material surface.

2 (Previously presented) The method according to Claim 1, wherein the semiconductor material surface is a collar region in a deep trench.

3. (Original) The method according to Claim 1, further comprising rinsing the partially manufactured integrated circuit with deionized water.

4. (Original) The method according to Claim 1, wherein the solvent is selected from the group consisting of acetone, methyl ethyl ketone, cyclohexanone, methyl isoamyl ketone and 2-heptanone, ethyleneglycol, ethyleneglycol monoacetate, diethyleneglycol, diethyleneglycol monoacetate, propyleneglycol, propyleneglycol monoacetate, dipropyleneglycol and dipropyleneglycol monoacetate as well as monomethyl, monoethyl, monopropyl, monobutyl and monophenyl ethers thereof, dioxane, methyl lactate, ethyl lactate, methyl acetate, ethyl acetate, butyl acetate, methyl pyruvate, ethyl pyruvate, methyl methoxypropionate, ethyl ethoxypropionate and mixtures thereof.

5. (Canceled)

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6. (Original) The method according to Claim 1, wherein the dopant ions are selected from the group consisting of arsenic, gallium, indium, phosphorous, boron, antimony and bismuth ions.

7. (Previously presented) The method according to Claim 1, further comprising heating the semiconductor material surface and removing an increased amount of dopant ions relative to not heating the semiconductor material surface.

8. (Canceled)

9. (Currently amended) A method of cleaning a semiconductor material surface of a partially manufactured integrated circuit subsequent to implantation of dopant ions into the surface, wherein the semiconductor material surface contains dopant ions, the method comprising:

implanting dopant ions into selected areas of the semiconductor material;

coating the semiconductor material surface containing the dopant ions with a solution consisting essentially of a non-aqueous organic solvent selected from the group consisting of ketones, polyhydric alcohols, cyclic ethers and esters; and

removing the solvent and the dopant ions from the semiconductor material surface.